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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/010,808	11/13/2001	Pentti Nieminen	602.356USW1	7300

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EXAMINER

STERRETT, JEFFREY L

ART UNIT	PAPER NUMBER
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2838

DATE MAILED: 09/16/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

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010,808

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8

DATE MAILED:

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

- ☐ Responsive to communication(s) filed on _____
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.**

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

- ☒ Claim(s) 1-28 is/are pending in the application.
- ☐ Of the above, claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-28 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☒ The drawing(s) filed on 11/13/01 is/are objected to by the Examiner.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
- ☐ received in Application No. (Series Code/Serial Number) _____
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

- ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- ☒ Notice of Reference Cited, PTO-892
- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 6
- ☐ Interview Summary, PTO-413
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Notice of Informal Patent Application, PTO-152

--SEE OFFICE ACTION ON THE FOLLOWING PAGES--

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~~1.~~ Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

~~2.~~ The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

~~3.~~ The drawings are objected to because in figures 1a and 5 the connections of input source U_i , capacitor C_i , capacitor C_1 , switch A, and switch B are not clearly and distinctly shown with connection dots as is done elsewhere in that figure. Likewise the drawings are objected to because in figures 1a and 5 the connections of output source U_o , capacitor C_o , ground GND, and filter winding S_c are not clearly and distinctly shown with connection dots as is done elsewhere in that figure. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

~~4.~~ ¹⁵ Claims ~~1-14~~ 15-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims ~~1-14~~ are improper and incorrect since they are supposedly method claims but recite nothing but apparatus limitations.

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Claims ~~1-13~~ and 15-27 are vague and indefinite since in line 13 of claim 1 and line 12 of claim 15 the primary and secondary windings are recited as producing flux in the same direction as that of the filter coil but claims 3 and 17 recites that the flux produced by the secondary is opposite of that of the primary windings.

Claims ¹⁵~~1-27~~ are confusing since they recite that the secondary winding produces magnetic flux however conventionally only the primary winding of a transformer produces magnetic flux from an input power source while the transformer secondary winding produces power from the magnetic flux.

Claims ~~4-7, 10-12~~, 18-21, and 24-26 are vague and indefinite since the terms "the supply voltage", "the first side", "the second side", "the former winding", "the input voltage", "the first pole", "the output voltage", "the second pole", and "the output" all lack proper antecedent basis.

Claim ~~8~~ is incorrect and improper since in line 4 "capacitor]" should be corrected to --capacitor--.

Claims ~~14~~ and 25 are vague and indefinite since in lines 2 and 4 of claims 11 and 25 "a third and fourth switching elements" lack the basis of any recitation of first and second switching elements. It is suggested that claim 11 instead depend upon claim 4 and that claim 25 instead depend upon claim 18.

Appropriate correction is required. It should be noted that the following prior art rejections are based on the best understanding of the recited invention considering the above mentioned vague, indefinite, confusing, improper, and incorrect language.

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~~5.~~ The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

~~6.~~ Claims ~~1, 3, 14~~, 15, 17, and 28 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Cielo et al (US 3,694,726).

~~7.~~ Claims ~~1, 3, 10, 12, 14~~, 15, 17, 24, 26, and 28 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Bloom (US 4,864,478 or 4,961,128).

~~8.~~ Claims ~~2, 6~~, 16, and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over either Cielo et al or Bloom.

Cielo et al and Bloom both teach a chopper type DC converter as recited by claims 2, 6, 16, and 20 except for utilizing four windings on the primary side of the converter. Utilizing multiple primary transformer windings was an old and known expedient to those of ordinary skill in the power supply art at the time of the invention. It would have been obvious to one of

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ordinary skill in the power supply art at the time of the invention to have modified the chopper type DC converter of Cielo et al or Bloom by utilizing four transformer primary windings instead of two transformer primary windings taught by Cielo et al or Bloom since both were old and known expedients to those of ordinary skill in the power supply art at the time of the invention.

~~9.~~ Claims ~~4, 5, 7,~~ 18, 19, and 21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over either Cielo et al or Bloom.

Cielo et al and Bloom both teach a chopper type DC converter as recited by claims 4, 5, 7, 18, 19, and 21 except for utilizing a capacitor in parallel with the input source. Utilizing an input capacitor was an old and known expedient to those of ordinary skill in the power supply art at the time of the invention. It would have been obvious to one of ordinary skill in the power supply art at the time of the invention to have modified the chopper type DC converter of Cielo et al or Bloom by utilizing a capacitor in parallel with the input source since input capacitors were old and known expedients to those of ordinary skill in the power supply art at the time of the invention.

~~10.~~ Claims ~~X~~ and 22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over either Cielo et al or Bloom in combination with Barrett.

Cielo et al and Bloom both teach a chopper type DC converter as recited by claims 8 and 22 except for utilizing a half bridge converter topology. Utilizing a half bridge converter topology was an old and known expedient to those of ordinary skill in the power supply art at the time of the invention, as taught by Barrett for example. It would have been obvious to one of ordinary

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skill in the power supply art at the time of the invention to have modified the chopper type DC converter of Cielo et al or Bloom by utilizing a half bridge converter topology since doing so was an old and known expedient to those of ordinary skill in the power supply art at the time of the invention, as taught by Barrett for example.

~~11.~~ Claims ~~22~~ and 23 are rejected under 35 U.S.C. § 103(a) as being unpatentable over either Cielo et al or Bloom in combination with Morris.

Cielo et al and Bloom both teach a chopper type DC converter as recited by claims 9 and 23 except for utilizing a full bridge converter topology. Utilizing a full bridge converter topology was an old and known expedient to those of ordinary skill in the power supply art at the time of the invention, as taught by Morris for example. It would have been obvious to one of ordinary skill in the power supply art at the time of the invention to have modified the chopper type DC converter of Cielo et al or Bloom by utilizing a full bridge converter topology since doing so was an old and known expedient to those of ordinary skill in the power supply art at the time of the invention, as taught by Morris for example.

~~12.~~ Claims ~~24~~ and 25 are rejected under 35 U.S.C. § 103(a) as being unpatentable over either Cielo et al or Bloom.

Cielo et al and Bloom both teach a chopper type DC converter as recited by claims 11 and 25 except for utilizing a third and fourth switching elements on the secondary side. Synchronous rectifiers were old and known expedients to those of ordinary skill in the power supply art at the

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time of the invention. It would have been obvious to one of ordinary skill in the power supply art at the time of the invention to have modified the chopper type DC converter of Cielo et al or Bloom by utilizing a synchronous rectifier as the rectifier of Cielo et al or Bloom since doing so was an old and known expedient to those of ordinary skill in the power supply art at the time of the invention.

~~13.~~ Claims ~~13~~ and 27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over either Cielo et al or Bloom.

Cielo et al and Bloom both teach a chopper type DC converter as recited by claims 13 and 27 except for utilizing two outputs on the secondary side. Utilizing multiple outputs on the secondary side of a transformer was an old and known expedient to those of ordinary skill in the power supply art at the time of the invention. It would have been obvious to one of ordinary skill in the power supply art at the time of the invention to have modified the chopper type DC converter of Cielo et al or Bloom by utilizing two outputs on the secondary side since doing so was an old and known expedient to those of ordinary skill in the power supply art at the time of the invention.

~~14.~~ The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Cuk (US 4,257,087), Gautherin et al (US 4,675,796), Sturgeon (US 4,858,093; 5,208,739; and 5,440,472), Archer (US 5,485,362), Chen (US 5,784,266), and Santi (US

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5,790,005) are cited to show chopper type DC converters old and known in the art at the time of the invention..

~~15.~~ Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey Sterrett whose telephone number is (703) 308-1632. The examiner can normally be reached on Monday through Thursday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Nappi, can be reached on (703) 308-3370. The fax phone number for this Art Unit is (703) 305-7723 and the fax phone number for this Group is (703) 305-3431 or (703) 305-3432.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

jls

September 12, 2002



Jeffrey L. Sterrett

Primary Examiner

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